Prioritizing Cleft/Craniofacial Surgical Care after the COVID-19 Pandemic

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Prioritizing Cleft/Craniofacial Surgical Care after the COVID-19 Pandemic

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Background: It is anticipated that in due course the burden of emergency care due to COVID-19 infected patients will reduce sufficiently to permit elective surgical procedures to recommence. Prioritizing cleft/craniofacial surgery in the already overloaded medical system will then become an issue. The European Cleft Palate Craniofacial Association, together with the European Cleft and Craniofacial Initiative for Equality in Care, performed a brief survey to capture a current snapshot during a rapidly evolving pandemic.

Methods: A questionnaire was sent to the 2242 participants who attended 1 of 3 recent international cleft/craniofacial meetings.

Results: The respondents indicated that children with Robin sequence who were not responding to nonsurgical options should be treated as emergency cases. Over 70% of the respondents indicated that palate repair should be performed before the age of 15 months, an additional 22% stating the same be performed by 18 months. Placement of middle ear tubes, primary cleft lip surgery, alveolar bone grafting, and velopharyngeal insufficiency surgery also need prioritization. Children with craniofacial conditions such as craniosynostosis and increased intracranial pressure need immediate care, whilst children with craniosynostosis and associated obstructive sleep apnea syndrome or proptosis need surgical care within 3 months of the typical timing. Craniosynostosis without signs of increased intracranial pressure needs correction before the age of 18 months.

Conclusions: This survey indicates several areas of cleft and craniofacial conditions that need prioritization, but also certain areas where intervention is less urgent. We acknowledge that there will be differences in the post COVID-19 response according to circumstances and policies in individual countries. *(Plast Reconstr Surg Glob Open 2020;8:e3080; doi: 10.1097/GOX.0000000000003080; Published online 14 September 2020.)*

INTRODUCTION

On March 11, 2020, the World Health Organization declared COVID-19 to be a global pandemic, which classifies the outbreak as an international emergency.[1] Healthcare is one of the major COVID-impacted areas, where medical supplies and services in hospitals are being reprioritized, with only urgent oncology and emergency trauma surgeries are being performed, while elective surgical care is being postponed. As elective surgeries are being postponed, a significant excess of surgical patients is being

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created in addition to those patients who were already on waiting lists before the COVID-19 crisis. Depending on how long the COVID-19 outbreak will prevail, unequivocally, many elective nonacute surgeries will become urgent at some point in time. Moreover, once the coronavirus crisis decreases, many hospitals will have problems prioritizing nonacute surgery.

To ensure optimum care in these difficult circumstances and to minimize adverse consequences for patients, the European Cleft Palate Craniofacial Association together with the European Cleft and Craniofacial Initiative for Equality in Care would like to facilitate the dialogue and discussion with health authorities about prioritizing surgical interventions. Therefore, we developed a questionnaire aimed at defining acceptable timeframes or maximum ages when various types of cleft or craniofacial surgery should be performed after the COVID-19 crisis. We acknowledge that there will be differences in the post COVID-19 response according to circumstances and policies in individual countries.

METHODS

A questionnaire was sent to 2242 participants of the 2015 European Cleft Craniofacial meeting in Gothenburg, Sweden; the 2017 13th International Cleft Meeting in Chennai, India; and the 2019 European Cleft Palate Craniofacial Association meeting in Utrecht, the Netherlands. The questionnaire is added in Supplemental Digital Content 1 and includes 19 questions about acceptable waiting times with regard to cleft and craniofacial surgery. (**See appendix, Supplemental Digital Content 1**, which displays the questionnaire use for this study, **http://links.lww.com/PRSGO/B486**.)

This survey aimed to capture a snapshot of current opinions at a narrow time window during the rapidly evolving COVID pandemic. Respondents were therefore given a window of 10 days to respond. A reminder was sent after 7 days.

RESULTS

We received 281 responses (response rate, 12.5%); however, specialists working in the same cleft/craniofacial center filled in only one form for the whole group. Most respondents originated from Europe (62.6%), which is followed by those from Asia (20.1%) and the United States (9.7%). The majority of respondent physicians were specialized in plastic surgery (33.3%), maxillofacial surgery (24.7%), and orthodontics (17.2%). The questionnaire revealed that the medical practice of respondents was severely restricted owing to the COVID-19 virus pandemic: on a scale of 0 to 100 (0, no restrictions at all; 100, extremely severe restrictions), the median reported number was 90.0 with an interquartile range of 36.5.

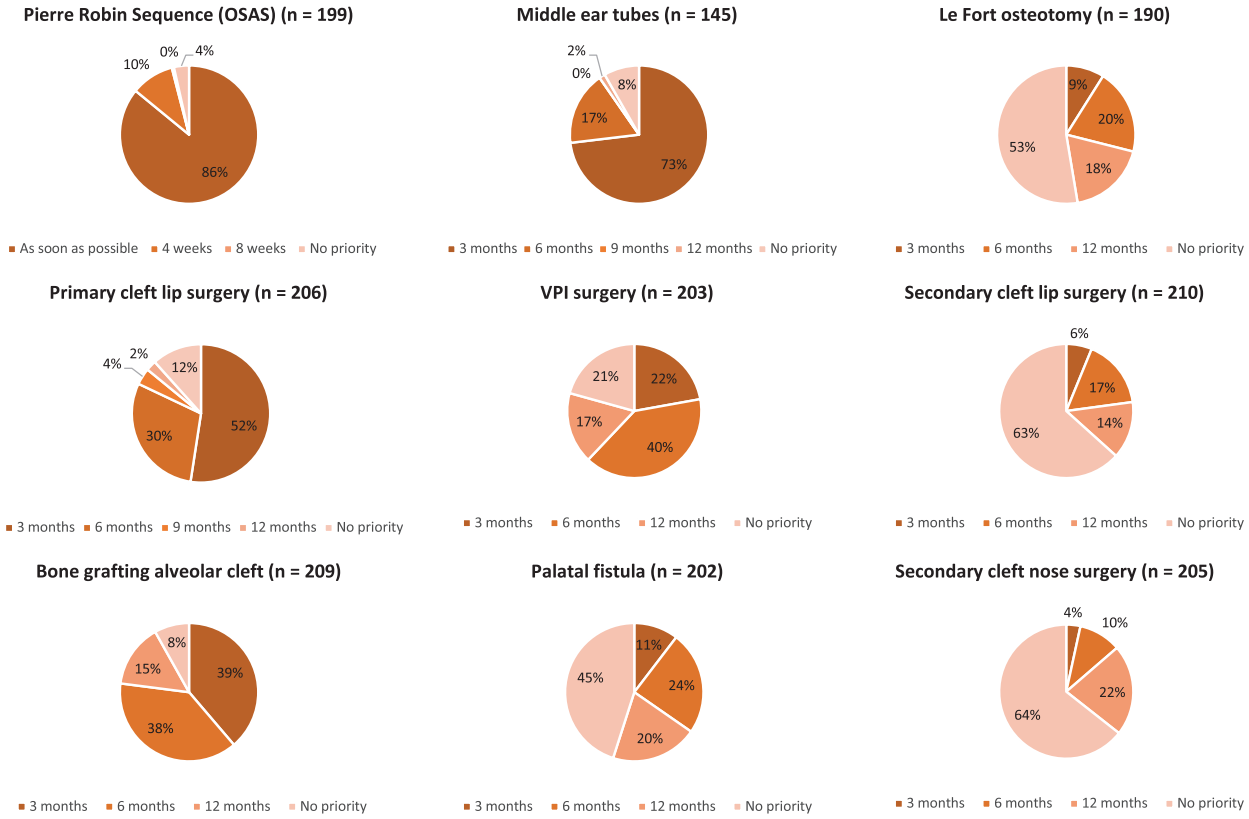
The survey revealed that there were several procedures with regard to cleft surgery that were considered high priority (Table 1). Of all respondents involved in cleft surgery (n = 206), 82% felt that primary lip surgery could be maximally delayed from the normal protocol by up to 6 months (Fig. 1). Of the 228 respondents performing palate surgery, 55% (n = 125) indicated that the (soft) palate should be closed before the age of 12 months, while >70% of the respondents indicated that palate repair should be performed before the age of 15 months, with an additional 22% stating by 18 months. At the comments section, many surgeons indicated that because of solving the "solidarity problem" with the coronavirus, many would accept these as "absolute maximum" and that most surgeons felt that delaying past the age of 12 months would normally be the age limit. The placement of middle ear tubes in children with problems related to cleft lip and palate could be postponed up to 6 months according to 90% of the 145 respondents, although the majority (73%) recommended a delay of 3 months. With regard to surgical intervention in children with Robin sequence who suffer from obstructive sleep apnea syndrome (OSAS) and do not respond to positional changes, 86% of the 199 respondents said it should be performed immediately and 96% of the respondents indicated that this should be done within 4 weeks.

With regard to secondary speech surgery, 62% of all 203 respondents (n = 126) even felt that a waiting time of 6 months is acceptable, while 79% of the 203 (n = 160) respondents felt that a wait of maximally 12 months was acceptable. Bone grafting in patients with an alveolar cleft should be performed within 6 months according to 77% of the 209 respondents. Finally, regarding palatal fistula closure, Le Fort I osteotomy with orthodontic pretreatment and secondary cleft lip and nose surgery, participants felt that these procedures should be less prioritized.

Table 1. Summary of Acceptable Times to Wait for Surgery

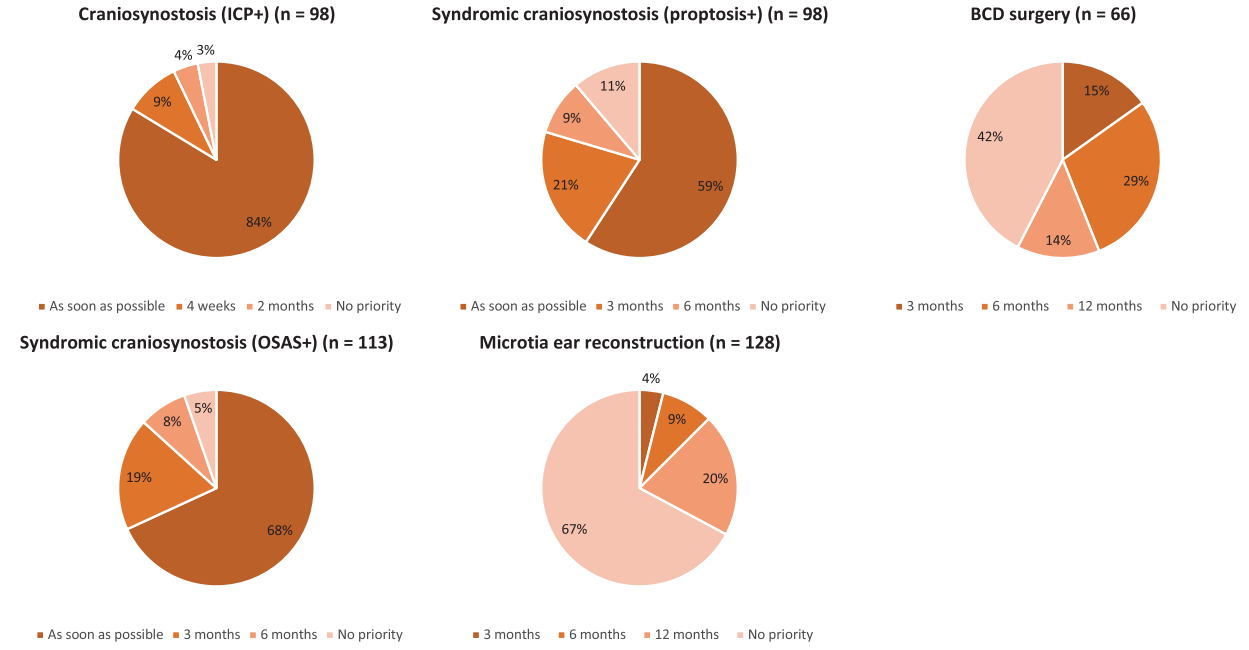
Cleft Surgery	Craniofacial Surgery
Delay acceptable (months)	
Immediate: Robin sequence needing surgery (86%)	Immediate: Craniosynostosis with increased ICP (84%)
<6 months: Middle ear tubes (90%)	<3 months: Craniosynostosis with OSAS signs (87%)
Primary lip surgery (82%)	<3 months: Craniosynostosis with proptosis signs (80%)
Bone grafting (77%)	Less priority: Microtia ear reconstruction (67%)
<12 months: VPI surgery (79%)	Bone conducting device surgery (42%)
Less priority: Secondary cleft nose (64%)	<6 months: Craniosynostosis with springs (66%)
Secondary cleft lip (63%)	<18 months: Craniosynostosis correction without signs ICP (91%)
Le Fort I osteotomy (53%)	
Palatal fistula (45%)	
Surgery before specific age	
<18 months: (Soft) palate surgery (93%)	

Related Digital Media are available in the full-text version of the article on www.PRSGlobalOpen.com.



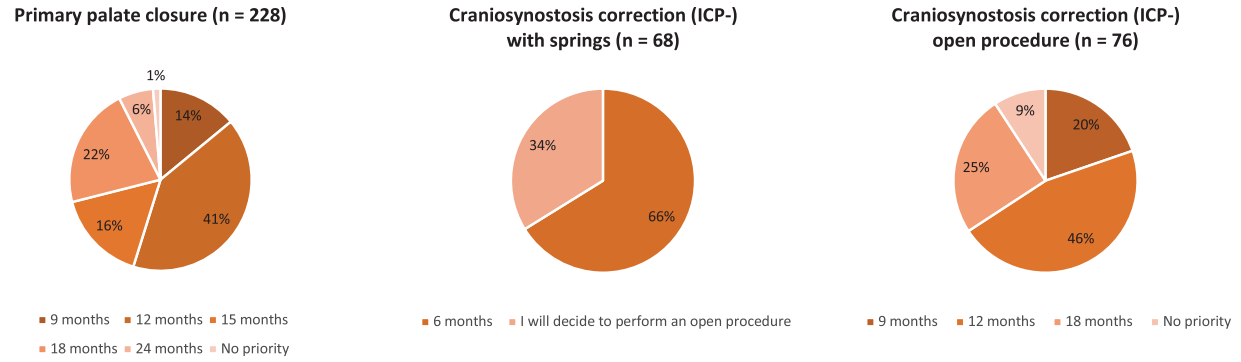
OSAS: obstructive sleep apnea syndrome; VPI: velopharyngeal insufficiency.

Fig. 1. Acceptable waiting times for cleft surgery.



BCD: bone conducting device; ICP: intracranial pressure; OSAS: obstructive sleep apnea syndrome.

Fig. 2. Acceptable waiting times for craniofacial conditions. BCD, Bone conducting device.



ICP: intracranial pressure.

Fig. 3. Ages (months) when surgery should be performed.

The survey revealed that there are several procedures with regard to craniofacial surgery that are considered high priority (Table 1; Figs. 2, 3). First, a craniosynostosis correction should be performed as soon as possible in patients with signs of intracranial pressure (ICP), according to 84% of the 98 respondents. Craniosynostosis without signs of ICP should be operated on before the age of 18 months according to 91% of 76 respondents (n = 69), and 66% of all 76 respondents (n = 50) even felt that this should be done before the age of 12 months. Furthermore, patients with syndromic craniosynostosis and signs of obstructive breathing/OSAS or proptosis should undergo surgery as soon as possible, with a maximum acceptable delay of 3 months.

For patients without signs of ICP, surgery by using springs/endoscopic strip removal should be performed before the age of 6 months. A group of respondents (66% of 68 respondents) indicated to opt for an open procedure, which should ideally be done before the age of 12 months. Craniofacial surgeries that were considered not necessary to prioritize included the implantation of a bone conduction device and ear reconstruction in microtia patients.

DISCUSSION

Due to the COVID-19 pandemic, elective surgeries are being postponed and it is expected that many hospitals will have problems prioritizing nonacute surgery once the COVID-19 crisis decreases. To facilitate the dialogue and discussion with health authorities about prioritizing surgical interventions, a questionnaire was sent to specialists working in cleft and craniofacial care worldwide. This has led to a snapshot of acceptable waiting times for cleft and craniofacial surgery. In relation to this, it is of paramount importance to take into account that the health expenditure per inhabitant varies significantly between countries,[2] and access to healthcare remains uneven across countries and social groups, according to socioeconomic status, place of residence, ethnic group, and gender.[3] This contributes significantly to the available provision of care, and even more so in the aftermath of COVID-19 pandemic.

A higher response rate would have strengthened this study; however, due to the dire consequences of COVID-19, we chose for a response window of just 10 days. Moreover, many participants reported to have responded on behalf of their center after correspondence with their team members. As we used a mailing list with email addresses of attendees of three different international cleft/craniofacial conferences, some of our potential respondents could have been invited multiple times with different email addresses, or it could have included individuals who are not directly involved in patient care anymore. This might have also reduced the response rate. Therefore, the actual response rate of the current study is unknown.

With regard to cleft surgery, the specialists indicated that (1) surgical intervention in children with Robin sequence who suffer from OSAS not responding to conservative measures and subsequently needing surgery should not be delayed. (2) Primary cleft lip, bone grafting, placement of middle ear tubes, and velopharyngeal insufficiency (VPI) surgeries can be delayed by several months. (3) Closure of the (soft) palate can be delayed for several months, although most respondents do suggest closure before the age of 15 months. (4) Palatal fistula closure, Le Fort I osteotomy, and secondary cleft lip and nose surgeries do not need to be prioritized and can therefore safely be postponed. With regard to craniofacial surgery, the specialists indicated that (1) a craniosynostosis correction should be performed as soon as possible in patients with signs of ICP and within 3 months when they have OSAS or proptosis, (2) craniosynostosis correction in patients without signs of ICP can be delayed by several months, and (3) the implantation of a bone conducting device and ear reconstructions have less priority and may therefore safely be postponed.

We are fully aware that this study did not include a comparison with the "normal" timing protocol for each center, for example, there are significant variations in the timing of cleft palate surgery between centers. However, we do feel that the information obtained does give some indications about prioritizing cleft/craniofacial surgery because government and state recommendations do not provide clear guidance on how plastic and reconstructive surgeons should approach elective surgeries.[4,5] Moreover, the pediatric surgical population is unique for several reasons—most notably the time-sensitive nature of many

pediatric interventions.[6] The overview presented here is intended as a complementary guide, and healthcare providers, local and national regulatory bodies will have to determine actual practice in each hospital or facility. Any additional restrictions that are applied by such bodies should supersede the timeframes mentioned here.

The American Cleft Palate-Craniofacial Association (ACPA) has released a statement providing guidance on cleft-lip– or cleft-palate–related surgeries during the COVID-19 pandemic.[7] This survey complements and supports much of their guidance. However, individual circumstances and the best interests of each patient will dictate what happens in practice. The ACPA advises that (1) primary cleft lip surgery can be delayed; (2) cleft palate repair may be delayed; (3) neonatal airway management associated with Robin sequence is essential, and local protocols should be followed on a case-by-case basis; (4) VPI surgery may be safely delayed for several months or even longer; (5) delaying secondary surgeries related to cleft lip and nose should be considered; and (6) orthognathic surgery may be suggested to manage occlusion, sleep apnea, or appearance, but orthognathic surgery in patients with cleft lip and palate can be delayed. When the ban on elective surgery is being lifted, this survey supports the notion also suggested by the ACPA to choose to prioritize palate repair surgery over VPI surgery, starting with the oldest children. However, the stage a child has reached in their language development may also be relevant in this decision. Because COVID-19 transmission is primarily through droplet spread, teams that perform procedures in the head and neck are at a high risk for infection. Therefore, where available and possible, preoperative COVID-19 testing should be done.

In addition to the advice provided by the ACPA, the American College of Surgeons, the American Society of Anesthesiologists, the Association of periOperative Registered Nurses, and the American Hospital Association have made a joint statement and released a list of 10 issues that should be addressed before a healthcare organization resumes elective surgeries that have been delayed.[8] Furthermore, the Royal College of Surgeons of England published recommendations that are structured under 9 themes to allow services to provide safe and efficient patient care, but also to ensure that when surgery resumes, it will be sustainable in the face of the recurrent pandemic in the future.[9]

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